

**Listing of the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): An isolated protein complex having a first protein interacting with a second protein, said first protein being selected from the group consisting of:

(a) Tsg101,

(b) a Tsg101 fragment that comprises a UEV domain and capable of interacting with ~~interacts with an~~ HIV GAGp6 late domain,

(c) ~~a homologue of Tsg101 capable of interacting with~~ a first polypeptide that interacts with an HIV GAGp6 late domain ~~and having and has~~ an amino acid sequence that is at least about 50% identical to Tsg101 75% identical to (a) or (b), and

(d) ~~a homologue of said Tsg101 fragment capable of interacting with HIV GAGp6 late domain and having an amino acid sequence that is at least about 50% identical to said Tsg101 fragment~~ a first fusion protein comprising (a), (b), or (c);

and said second protein being selected from the group consisting of:

(i) HIV GAG,

(ii) ~~an HIV GAG fragment containing a fragment of HIV GAG that comprises an HIV GAGp6 late domain motif and capable of interacting~~ interacts with Tsg101,

(iii) ~~a homologue of HIV GAG that is capable of interacting~~ a second polypeptide that interacts with Tsg101, with Tsg101 and has an amino acid sequence that is at least about 50% identical to that of HIV GAG ~~and contains an HIV GAGp6 late domain motif~~ (i) or (ii), and

(iv) ~~a homologue of said HIV GAG fragment that is capable of interacting with Tsg101, has an amino acid sequence that is at least about 50% identical to that of said HIV GAG fragment, and contains an HIV GAGp6 late domain motif~~ a second fusion protein comprising (i), (ii), or (iii).

Claim 2 (currently amended): The isolated protein complex of Claim 1, wherein said second protein is HIV GAGp6 or a fragment thereof that ~~contains~~ comprises an HIV GAGp6 late domain and ~~is capable of interacting~~ interacts with Tsg101.

Claim 3 (currently amended): The isolated protein complex of Claim 1, wherein said first protein is ~~[[a]] said first fusion protein containing (a) Tsg101 or (b) said Tsg101 fragment or (c) said homologue of Tsg101 or (d) said homologue of said Tsg101 fragment.~~

Claim 4 (currently amended): The isolated protein complex of Claim 1, wherein said second protein is ~~[[a]] said second fusion protein containing (a) HIV GAG or (b) said HIV GAG fragment or (c) said homologue of HIV GAG or (d) said homologue of said HIV GAG fragment.~~

Claim 5 (currently amended): An isolated protein complex having:

a first protein which is ~~Tsg101 or a Tsg101 fragment capable of interacting with~~ that comprises a UEV domain and interacts with an HIV GAGp6 late domain, or a ~~homologue thereof capable of interacting~~ first polypeptide that interacts with an HIV GAGp6 late domain and ~~having~~ has an amino acid sequence that is at least ~~50% identical~~ about 75% identical to that of ~~Tsg101 or said Tsg101 fragment, interacting with~~

a second protein which is HIV GAGp6 or an HIV GAGp6 fragment ~~containing~~ that comprises an HIV GAGp6 late domain and ~~capable of interacting~~ interacts with Tsg101, or a ~~homologue thereof~~ second polypeptide that contains comprises an HIV GAGp6 late domain motif, ~~is capable of interacting with Tsg101~~ interacts with Tsg101, and has an amino acid sequence that is at least about 50% identical to that of HIV GAGp6 or said HIV GAGp6 fragment.

Claim 6 (currently amended): The isolated protein complex of Claim 5, wherein said first protein is a fusion protein ~~containing (a) Tsg101 or (b)~~ comprising said Tsg101 fragment or ~~(c) said homologue of Tsg101 or said Tsg101 fragment~~ said first polypeptide.

Claim 7 (currently amended): The isolated protein complex of Claim 5, wherein said second protein is a fusion protein ~~containing~~ comprising (a) HIV GAGp6 or (b) said HIV GAGp6 fragment or (c) said ~~homologue of HIV GAGp6 or said HIV GAGp6 fragment~~ second polypeptide.

Claim 8 (currently amended): An isolated protein complex comprising:

(a) a first protein which is selected from the group consisting of

(i) ~~Tsg101 protein, a Tsg101 fragment that comprises a UEV domain and~~ interacts with an HIV GAGp6 late domain,

(ii) a Tsg101 ~~protein~~ homologue ~~having that has~~ having that has an amino acid sequence at least about 90% identical to that of Tsg101 ~~or (i) and capable of interacting with that~~ interacts with an HIV GAGp6 late domain, and,

(iii) a ~~Tsg101 protein fragment containing the Tsg101 UEV domain and~~ capable of interacting with HIV GAGp6 late domain, and a fragment of (ii) that interacts with an HIV GAGp6 late domain, and

(iv) a fusion protein ~~containing comprising~~ (i), (ii), or (iii) said Tsg101 protein, said Tsg101 homologue; and

(b) a second protein selected from the group consisting of

(1) HIV GAG,

(2) an HIV GAG fragment ~~containing that comprises~~ comprising an HIV GAGp6 late domain motif and ~~capable of interacting~~ interacts with Tsg101,

(3) an HIV GAG homologue ~~having that has~~ having that has an amino acid sequence at least about 90% identical to that of ~~HIV GAG and capable of interacting with Tsg101~~ (1) or (2) and interacts with Tsg101,

(4) HIV GAGp6,

(5) an HIV GAGp6 homologue ~~having that has~~ having that has an amino acid sequence at least about 90% identical to that of HIV GAGp6 and ~~capable of interacting~~ interacts with Tsg101,

(6) an HIV GAGp6 fragment ~~containing that comprises~~ comprising an HIV GAGp6 late domain motif and ~~capable of interacting~~ interacts with Tsg101, and

(7) a fusion protein ~~containing~~ comprising (1), (2), (3), (4), (5), or (6) ~~said HIV GAG, said HIV GAG fragment, said HIV GAG homologue, said HIV GAGp6, said HIV GAGp6 homologue or said HIV GAGp6 fragment;~~

wherein said first and second proteins interact to form said isolated protein complex.

Claim 9 (currently amended): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment ~~contains~~ comprises an amino acid sequence of SEQ ID NO:25 or SEQ ID NO:26.

Claim 10 (currently amended): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment ~~contains~~ comprises an amino acid sequence of SEQ ID NO:31 or SEQ ID NO:32.

Claim 11 (currently amended): The isolated protein complex of Claim 8, wherein said HIV GAGp6 fragment has a contiguous span of at least 10 amino acid residues of a naturally occurring HIV GAGp6, said contiguous span ~~containing~~ comprising a P(T/S)AP late domain motif.

Claim 12 (currently amended): An isolated protein complex comprising:

a first protein which is ~~Tsg101 or~~ a Tsg101 fragment comprising a UEV domain, or a homologue thereof having an amino acid sequence that is at least 50% ~~identical~~ about 75% identical to that of ~~Tsg101 or~~ said Tsg101 fragment, wherein said Tsg101 fragment ~~and said or said homologue are capable of interacting with~~ interact with an HIV GAGp6 HIV Gagp6 late domain; and

a second protein which is a retrovirus ~~GAG or~~ GAG, a retrovirus GAG fragment ~~containing the~~ comprising a P(T/S)AP late domain motif, or a homologue ~~thereof of said~~ retrovirus GAG or said retrovirus GAG fragments ~~containing the~~ that comprises a P(T/S)AP late domain motif ~~and having~~ and has an amino acid sequence that is at least about 50% identical to that of said retrovirus GAG or said retrovirus GAG fragment, wherein said retrovirus GAG, said retrovirus GAG fragment, said homologue of said

retrovirus GAG, or said homologue of said retrovirus GAG fragment interacts with Tsg101, and wherein said first and second proteins interact to form said isolated protein complex.

Claim 13 (original): The isolated protein complex of Claim 12, wherein said retrovirus is a lentivirus.

Claim 14 (original): The isolated protein complex of Claim 13, wherein said lentivirus is a primate lentivirus.

Claim 15 (original): The isolated protein complex of Claim 14, wherein said primate lentivirus is selected from the group consisting of HIV-1, HIV-2, HIV-3, and simian immunodeficiency viruses.

Claim 16 (original): The isolated protein complex of Claim 13, wherein said lentivirus is a non-primate lentivirus selected from the group consisting of bovine lentiviruses, feline lentiviruses, and ovine/caprine lentiviruses.

Claim 17 (currently amended): An isolated protein complex comprising:

- (a) a first protein which is selected from the group consisting of
  - (i) Tsg101, a Tsg101 fragment that comprises a UEV domain and interacts with an HIV GAGp6 late domain,
  - (ii) a ~~Tsg101 homologue~~ having first polypeptide that has an amino acid sequence at least about 90% identical to that of Tsg101 or said Tsg101 fragment and capable of interacting with that interacts with an HIV GAGp6 late domain, and
  - (iii) a ~~Tsg101 fragment containing the Tsg101 UEV domain and capable of interacting with HIV GAGp6 late domain, and~~
  - (iv) a fusion protein containing ~~said Tsg101, said Tsg101 homologue or said Tsg101 fragment~~ comprising (i) or (ii); and
- (b) a second protein which is selected from the group consisting of

(1) a retrovirus GAG ~~having the~~ comprising a P(T/S)AP late domain motif,

(2) ~~a homologue of said retrovirus GAG, said homologue having a second polypeptide that has~~ an amino acid sequence at least about 90% identical to that of said retrovirus GAG and ~~capable of interacting that interacts~~ with Tsg101,

(3) a fragment of ~~said retrovirus GAG~~ (1) or (2) that comprises, ~~said fragment containing an HIV GAGp6 a~~ P(T/S)AP late domain motif and ~~being capable of interacting~~ interacts with Tsg101, and

(4) a fusion protein ~~containing said retrovirus GAG, said retrovirus GAG homologue or said retrovirus GAG fragment~~ comprising (1), (2) or (3);

wherein said first and second proteins interact to form said isolated protein complex.

Claim 18 (original): The isolated protein complex of Claim 17, wherein said retrovirus is a lentivirus.

Claim 19 (original): The isolated protein complex of Claim 18, wherein said lentivirus is a primate lentivirus.

Claim 20 (original): The isolated protein complex of Claim 19, wherein said primate lentivirus is selected from the group consisting of HIV-1, HIV-2, HIV-3, and simian immunodeficiency viruses.

Claim 21 (previously presented): The isolated protein complex of Claim 18, wherein said lentivirus is a non-primate lentivirus selected from the group consisting of bovine lentiviruses, feline lentiviruses, and ovine/caprine lentiviruses.

Claim 22 (currently amended): An isolated protein complex comprising:

(a) a first protein which is selected from the group consisting of

(i) ~~Tsg101,~~ a Tsg101 fragment that comprises a UEV domain and interacts with an HIV GAGp6 late domain,

(ii) a ~~Tsg101 homologue having~~ first polypeptide that interacts with an HIV GAGp6 late domain and has an amino acid sequence at least about 90% identical to that of Tsg101 or said Tsg101 fragment, and ~~and capable of interacting with HIV GAGp6 late domain,~~

(iii) ~~a Tsg101 fragment containing the Tsg101 UEV domain and capable of interacting with an HIV GAGp6 late domain, and~~

(iv) ~~a fusion protein containing said Tsg101, said Tsg101 homologue or said Tsg101 fragment~~ comprising (i) or (ii); and

(b) a second protein which is selected from the group consisting of

(1) a primate lentivirus GAG polypeptide that interacts with Tsg101,

(2) a primate lentivirus GAG homologue ~~having~~ that has an amino acid sequence at least about 90% identical to that of said primate lentivirus GAG and ~~capable of interacting~~ that interacts with Tsg101,

(3) a primate lentivirus GAGp6 ~~protein~~ that interacts with Tsg101,

(4) a primate lentivirus GAGp6 homologue ~~having~~ that has an amino acid sequence at least about 90% identical to that of HIV GAGp6 and ~~capable of interacting~~ that interacts with Tsg101,

(5) ~~a primate lentivirus GAGp6 fragment containing a fragment of (1), (2), (3), or (4) that comprises a~~ an HIV GAGp6 late domain motif and ~~capable of interacting~~ interacts with Tsg101, and

(6) a fusion protein ~~containing~~ comprising (1), (2), (3), (4), or (5) said primate lentivirus GAG, said primate lentivirus GAG homologue, said primate lentivirus GAGp6 protein, said primate lentivirus GAGp6 homologue or said primate lentivirus GAGp6 fragment;

wherein said first and second proteins interact to form said isolated protein complex.

Claim 23 (currently amended): An isolated protein complex comprising:

a first fusion protein ~~having~~ comprising a Tsg101 fragment ~~capable of interacting with~~ that interacts with an HIV GAGp6 late domain interacting with a second fusion

protein ~~containing~~ comprising a fragment of HIV GAG ~~containing~~ comprising an HIV GAGp6 late domain motif.

Claim 24-25 (cancelled)

Claim 26 (currently amended): An isolated protein complex having a first polypeptide covalently linked to a second polypeptide, wherein said first polypeptide is ~~Tsg101 or a homologue or fragment thereof capable of interacting a Tsg101 fragment that comprises a UEV domain and interacts with an HIV GAGp6 late domain or a homologue of said Tsg101 fragment that has an amino acid sequence at least about 75% identical to said Tsg101 fragment, wherein said Tsg101 fragment or said homologue of said Tsg101 fragment interacts with HIV GAG-p6~~ an HIV GAGp6 late domain, and wherein said second polypeptide is HIV GAG or a homologue or fragment thereof a fragment of HIV GAG that comprises containing an HIV GAGp6 late domain, a homologue of HIV GAG or said fragment of HIV GAG, that has an amino acid sequence at least about 50% identical to that of said HIV GAG or said fragment of HIV GAG, and said homologue interacts with Tsg101; and

wherein said first and second polypeptides interact to form said isolated protein complex.

Claim 27 (cancelled)

Claim 28 (withdrawn): A method for selecting modulators of a protein complex according to Claim 8, comprising:

- providing the protein complex;
- contacting said protein complex with a test compound; and
- determining the presence or absence of binding of said test compound to said protein complex.

Claim 29 (withdrawn): A method for selecting modulators of an interaction between a first protein and a second protein,



- (a) said first protein being selected from group consisting of
- (i) Tsg101 protein,
  - (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
  - (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
  - (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and
- (b) said second protein being selected from the group consisting of
- (1) HIV GAG polypeptide,
  - (2) a HIV GAG polypeptide homologue having an amino acid sequence at least 90% identical to that of HIV GAG polypeptide and capable of interacting with Tsg101,
  - (3) HIV GAGp6 protein,
  - (4) a HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 polypeptide and capable of interacting with Tsg101,
  - (5) a HIV GAGp6 fragment capable of interacting with Tsg101, and
  - (6) a fusion protein containing said HIV GAG polypeptide, said HIV GAG polypeptide homologue, said HIV GAGp6 protein, said HIV GAGp6 homologue or said HIV GAGp6 fragment, said method comprising:
    - contacting said first protein with said second protein in the presence of one or more test compounds; and
    - determining the interaction between said first protein and said second protein.

Claim 30 (withdrawn): The method of Claim 29, wherein at least one of said first and second proteins is a fusion protein having a detectable tag.

Claim 31 (withdrawn): The method of Claim 29, wherein said contacting step is conducted in a substantially cell free environment.

Claim 32 (withdrawn): The method of Claim 29, wherein said contacting step is conducted in a host cell.

Claim 33 (withdrawn): The method of Claim 32, wherein said host cell is a yeast cell.

Claim 34 (withdrawn): A method for selecting modulators of an interaction between a first protein and a second protein,

- (a) said first protein being selected from group consisting of
  - (i) Tsg101 protein,
  - (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
  - (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
  - (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and
- (b) said second protein being selected from the group consisting of
  - (1) a retrovirus GAG polypeptide having the P(T/S)AP late domain motif,
  - (2) a homologue of said retrovirus GAG polypeptide, said homologue having an amino acid sequence at least 90% identical to that of said retrovirus GAG polypeptide and capable of interacting with Tsg101,
  - (3) a fragment of said retrovirus GAG polypeptide, said fragment being capable of interacting with Tsg101, and
  - (4) a fusion protein containing said retrovirus GAG polypeptide, said retrovirus GAG polypeptide homologue or said retrovirus GAG polypeptide fragment, said method comprising:
    - contacting said first protein with said second protein in the presence of one or more test compounds; and
    - determining the interaction between said first protein and said second protein.

Claim 35 (withdrawn): The method of Claim 34, wherein said contacting step is conducted in a substantially cell free environment.

Claim 36 (withdrawn): The method of Claim 34, wherein said contacting step is conducted in a host cell.

Claim 37 (withdrawn): A method for selecting modulators of the protein complex of Claim 8, comprising:

contacting said protein complex with a test compound; and  
determining the interaction between said first protein and said second protein.

Claim 38 (withdrawn): A method for selecting modulators of the protein complex of Claim 17, comprising:

contacting said protein complex with a test compound; and  
determining the interaction between said first protein and said second protein.

Claim 39 (withdrawn): A method for selecting modulators of the protein complex of Claim 22, comprising:

contacting said protein complex with a test compound; and  
determining the interaction between said first protein and said second protein.

Claim 40 (withdrawn): A method for selecting modulators of an interaction between a first polypeptide and a second polypeptide,

(a) said first polypeptide being selected from group consisting of

(i) Tsg101 protein,

(ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,  
and

(iii) a Tsg101 protein fragment containing the Tsg101 UEV domain; and

(b) said second polypeptide being selected from the group consisting of

(1) HIV GAG polypeptide,

(2) a HIV GAG polypeptide homologue having an amino acid sequence at least 90% identical to that of HIV GAG polypeptide and capable of interacting with Tsg101,

(3) HIV GAGp6 protein,

(4) a HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 polypeptide and capable of interacting with Tsg101, and

(5) a HIV GAGp6 fragment capable of interacting with Tsg101, said method comprising:

providing in a host cell a first fusion protein having said first polypeptide, and a second fusion protein having said second polypeptide, wherein a DNA binding domain is fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second polypeptides;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first polypeptide and the second polypeptide;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 41 (withdrawn): The method of Claim 40, wherein said host cell is a yeast cell.

Claim 42 (withdrawn): A method for selecting modulators of the protein complex of Claim 17, comprising:

providing in a host cell a first fusion protein containing said first protein, and a second fusion protein containing said second protein, wherein a DNA binding domain is fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second proteins;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first protein and the second protein;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 43 (withdrawn): A method for selecting modulators of the protein complex of Claim 22, comprising:

providing in a host cell a first fusion protein containing said first protein, and a second fusion protein containing said second protein, wherein a DNA binding domain is fused to one of said first and second polypeptides while a transcription-activating domain is fused to the other of said first and second proteins;

providing in said host cell a reporter gene, wherein the transcription of the reporter gene is determined by the interaction between the first protein and the second protein;

allowing said first and second fusion proteins to interact with each other within said host cell in the presence of a test compound; and

determining the presence or absence of expression of said reporter gene.

Claim 44 (currently amended): A composition comprising:

(a) a first expression vector having a nucleic acid encoding a first protein which is selected from the group consisting of

(i) Tsg101,

(ii) ~~a Tsg101 homologue having an amino acid sequence at least 50% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,~~

(iii) ~~a Tsg101 fragment containing the Tsg101 that comprises a UEV domain and capable of interacting with~~ interacts with an HIV GAGp6 late domain,

[[iv)] (iii) a first polypeptide a homologue of said Tsg101 fragment having an amino acid sequence at least ~~50% identical~~ about 75% identical to that of said ~~Tsg101 fragment (i) or (ii), and capable of interacting with~~ that interacts with an HIV GAGp6 late domain, and

[[v)] (iv) a first fusion protein containing comprising (i), (ii), or (iii) said Tsg101, said Tsg101 homologue or said Tsg101 fragment, or said homologue of said Tsg101 fragment; and

(b) a second expression vector having a nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG,

~~(2) an HIV GAG homologue having an amino acid sequence at least 50% identical to that of HIV GAG and capable of interacting with Tsg101,~~

~~(3) HIV GAGp6,~~

~~[[ (4) ] (3) an HIV GAGp6 homologue having an amino acid sequence at least 50% identical to that of HIV GAGp6 and capable of interacting a fragment of (1) or (2) that interacts with Tsg101,~~

~~[[ (5) ] (4) an HIV GAGp6 fragment containing an that comprises an HIV GAGp6 late domain motif and capable of interacting interacts with Tsg101,~~

~~[[ (6) ] (5) a homologue of said HIV GAGp6 fragment having a second polypeptide that has an amino acid sequence at least about 50% identical to that of HIV GAGp6 fragment, containing an HIV GAGp6 late domain motif and capable of interacting (1), (2), (3), or (4), and that interacts with Tsg101, and~~

~~[[ (7) ] (6) a second fusion protein containing comprising (1), (2), (3), (4), or (5) said HIV GAG, said HIV GAG homologue, said HIV GAGp6, said HIV GAGp6 homologue or said HIV GAGp6 fragment, or said homologue of said HIV GAGp6 fragment;~~

wherein said first and second proteins ~~are capable of interacting~~ interact to form a protein complex.

Claim 45 (currently amended): A host cell comprising:

(a) a first expression vector having a nucleic acid encoding a first protein which is selected from the group consisting of

(i) Tsg101,

~~(ii) a Tsg101 homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,~~

~~(iii) a Tsg101 fragment containing the Tsg101 that comprises a UEV domain and capable of interacting with interacts with an HIV GAGp6 late domain,~~

~~[[ (iv) ] (iii) a homologue of said Tsg101 fragment having a first polypeptide that has an amino acid sequence at least 50% identical about 75% identical to that of said Tsg101 fragment, and capable of interacting with (i) or (ii), and interacts with an HIV GAGp6 late domain, and~~

[[ (v) ] ] (iv) a first fusion protein containing comprising (i), (ii), or (iii) ~~said Tsg101, said Tsg101 homologue or said Tsg101 fragment, or said homologue of said Tsg101 fragment;~~ and

(b) a second expression vector having a nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG,

(2) ~~an HIV GAG homologue having an amino acid sequence at least 90% identical to that of HIV GAG and capable of interacting with Tsg101,~~

(3) HIV GAGp6,

[[ (4) ] ] (3) ~~an HIV GAGp6 homologue having an amino acid sequence at least 90% identical to that of HIV GAGp6 and capable of interacting with a fragment of~~ (1) or (2) that comprises a late domain motif and interacts with Tsg101,

(5) ~~an HIV GAGp6 fragment containing an HIV GAGp6 late domain motif capable of interacting with Tsg101,~~

(6) (4) a homologue of said HIV GAGp6 fragment having a second polypeptide that has an amino acid sequence at least about 50% identical to that of HIV GAGp6 fragment, containing an HIV GAGp6 late domain motif and capable of interacting with (1), (2), or (3), and interacts with Tsg101, and

[[ (7) ] ] (5) a second fusion protein containing comprising (1), (2), (3), or (4) ~~said HIV GAG, said HIV GAG homologue, said HIV GAGp6, said HIV GAGp6 homologue or said HIV GAGp6 fragment, or said homologue of said HIV GAGp6 fragment;~~

wherein said first and second proteins ~~are capable of interacting~~ interact to form a protein complex.

Claim 46 (original): The host cell of Claim 45, wherein said host cell is a yeast cell.

Claim 47 (currently amended): The host cell of Claim 45, wherein said first and second proteins are ~~expressed in fusion~~ fusion proteins.

Claim 48 (currently amended): The host cell of Claim 45, wherein one of said first and second nucleic acids is operably linked to a nucleic acid encoding a DNA binding domain, and the other of said first and second nucleic acids is operably linked to a nucleic acid encoding a transcription-activation domain, whereby two fusion proteins can be produced in said host cell.

Claim 49 (original): The host cell of Claim 45, further comprising a reporter gene, wherein the expression of the reporter gene is determined by the interaction between the first protein and the second protein.

Claim 50 (currently amended): A host cell comprising:

(a) a first expression vector having a first nucleic acid encoding a first protein which is selected from the group consisting of

- (i) Tsg101,
- (ii) ~~a Tsg101 homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6 late domain,~~
- (iii) ~~a Tsg101 fragment containing the Tsg101 that comprises a UEV domain and capable of interacting with~~ interacts with an HIV GAGp6 late domain,
- (iii) a first polypeptide that has an amino acid sequence at least about 90% identical to (i) or (ii) and interacts with an HIV GAGp6 late domain, and
- (iv) ~~a first fusion protein containing comprising (i), (ii), or (iii) said Tsg101, said Tsg101 homologue or said Tsg101 fragment; and~~

(b) a second expression vector having a second nucleic acid encoding a second protein selected from the group consisting of

- (1) ~~a retrovirus GAG having the that comprises a P(T/S)AP late domain motif and capable of interacting~~ interacts with Tsg101,
- (2) ~~a homologue of said retrovirus GAG, said homologue having an amino acid sequence at least 90% identical to that of said retrovirus GAG and capable of interacting with Tsg101,~~



~~(3) a fragment of said retrovirus GAG fragment comprising a P(T/S)AP ;~~  
~~said fragment containing an HIV-GAGp6 late domain motif and being capable of~~  
~~interacting that interacts with Tsg101,~~

(3) a second polypeptide that has an amino acid sequence at least about  
90% identical to (1) or (2) and interacts with Tsg101, and

(4) a second fusion protein containing comprising (1), (2), or (3)said  
~~retrovirus GAG, said retrovirus GAG homologue or said retrovirus GAG fragment;~~  
wherein said first and second proteins interact to form a protein complex.

Claim 51 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 8 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 52 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 17 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 53 (withdrawn): A method for providing a compound capable of interfering with an interaction between the first and second proteins in the protein complex of Claim 22 comprising:

providing atomic coordinates defining a three-dimensional structure of said protein complex; and

designing or selecting compounds capable of interfering with the interaction between said first protein and said second protein based on said atomic coordinates.

Claim 54 (withdrawn): A method for selecting a compound capable of inhibiting a protein-protein interaction between Tsg101 and HIV GAGp6, comprising:

contacting a test compound with a protein selected from group consisting of

- (i) Tsg101 protein,
- (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
- (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and
- (iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and

determining whether said test compound is capable of binding said protein.

Claim 55 (withdrawn): The method of Claim 54, further comprising testing a test compound capable of binding said protein for its ability to interfere with a protein-protein interaction between Tsg101 and HIV GAGp6.

Claim 56 (withdrawn): The method of Claim 55, further comprising testing a test compound capable of binding said protein for its ability to inhibit HIV viral budding from an HIV-infected host cell.

Claim 57 (withdrawn): A method for selecting a compound capable of inhibiting a protein-protein interaction between Tsg101 and HIV GAGp6, comprising:

providing atomic coordinates defining a three-dimensional structure of a protein selected from group consisting of

- (i) Tsg101 protein,
- (ii) a Tsg101 protein homologue having an amino acid sequence at least 90% identical to that of Tsg101 and capable of interacting with HIV GAGp6,
- (iii) a Tsg101 protein fragment containing the Tsg101 UEV domain, and

(iv) a fusion protein containing said Tsg101 protein, said Tsg101 protein homologue or said Tsg101 protein fragment; and  
designing or selecting compounds capable of interacting with said protein based on said atomic coordinates.

Claim 58 (withdrawn): The method of Claim 57, further comprising testing a compound capable of interacting with said protein for its ability to interfere with a protein-protein interaction between Tsg101 and HIV GAGp6.

Claim 59 (withdrawn): The method of Claim 57, further comprising testing a test compound capable of interacting with said protein for its ability to inhibit HIV viral budding from an HIV-infected host cell.

Claim 60 (cancelled)

Claim 61 (currently amended): An expression vector comprising:

(a) a first nucleic acid encoding a first protein which is selected from the group consisting of

(i) Tsg101,

(ii) a Tsg101 fragment ~~containing the Tsg101~~ that comprises a UEV domain and capable of interacting with interacts with an HIV GAGp6 late domain,

(iii) ~~a homologue of Tsg101 or said Tsg101 fragment, having a first polypeptide that has an amino acid sequence at least 50% identical about 75% identical to that of Tsg101 or said fragment (i) or (ii) and capable of interacting with~~ interacts with an HIV GAGp6 late domain, and

(iv) a first fusion protein containing comprising (i), (ii), or (iii) Tsg101, said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment; and

(b) a second nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG,

~~(2) an HIV GAG fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101,~~

~~(3) a homologue of HIV GAG or said HIV GAG fragment, containing an HIV GAGp6 late domain motif and having an amino acid sequence at least 50% identical to HIV GAG or said HIV GAG fragment and capable of interacting with Tsg101,~~

(4) HIV GAGp6,

[[~~(5)~~]] (3) an HIV GAGp6 fragment containing a fragment of (1) or (2) that comprises an HIV GAGp6 late domain motif and capable of interacting with interacts with Tsg101,

[[~~(6)~~]] (4) a homologue of HIV GAGp6 or said HIV GAGp6 fragment, having a second polypeptide that comprises an amino acid sequence at least about 50% identical to that of HIV GAGp6 or said HIV GAGp6 fragment and capable of interacting with (1), (2), or (3) and that interacts with Tsg101, and

[[~~(7)~~]] (5) a second fusion protein containing comprising (1), (2), (3), or (4) said HIV GAG, said HIV GAG fragment, said homologue of HIV GAG or said HIV GAG fragment, said HIV GAGp6, said HIV GAGp6 fragment, or said homologue of HIV GAGp6 or said HIV GAGp6 fragment;

wherein said first and second proteins are capable of interacting interact to form a protein complex.

Claim 62 (previously presented): A host cell comprising the expression vector of Claim 61.

Claim 63 (currently amended): A non-human host cell expressing:

(a) a first protein which is selected from the group consisting of

(i) Tsg101,

(ii) a Tsg101 fragment ~~containing the Tsg101~~ that comprises a UEV domain and capable of interacting with and interacts with an HIV GAGp6 late domain,

(iii) a homologue of Tsg101 or said Tsg101 fragment, having a first polypeptide that has an amino acid sequence at least 50% identical about 75% identical to

that of ~~Tsg101 or said fragment and capable of interacting with (i) or (ii) and interacts with an HIV GAGp6 late domain, and~~

(iv) a first fusion protein comprising (i), (ii), or (iii) containing Tsg101, said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment; and

(b) a second protein selected from the group consisting of

(1) HIV GAG,

(2) ~~an HIV GAG fragment containing an HIV GAGp6 late domain motif and capable of interacting with Tsg101;~~

(3) ~~a homologue of HIV GAG or said HIV GAG fragment, containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to HIV GAG or said HIV GAG fragment and capable of interacting with Tsg101;~~

(4) HIV GAGp6,

[[ (5) ]] (3) an HIV GAGp6 fragment containing a fragment of (1) or (2) that comprises an HIV GAGp6 late domain motif and capable of interacting with interacts with Tsg101,

[[ (6) ]] (4) a homologue of HIV GAGp6 or said HIV GAGp6 fragment containing an HIV GAGp6 late domain motif, having a second polypeptide that has an amino acid sequence at least about 50% identical to that of HIV GAGp6 or said HIV GAGp6 fragment and capable of interacting with (1), (2), or (3) and interacts with Tsg101, and

(7) a second fusion protein comprising (1), (2), (3), or (4) containing said HIV GAG, said HIV GAG fragment, said homologue of HIV GAG or said HIV GAG fragment, said HIV GAGp6 protein, said HIV GAGp6 fragment, or said homologue of HIV GAGp6 or said HIV GAGp6 fragment;

wherein said first and second proteins are ~~capable of interacting~~ interact to form a protein complex within said non-human host cell.

Claim 64 (currently amended): An isolated human host cell comprising:

(a) a first promoter operably linked to a first chimeric nucleic acid encoding a first protein selected from the group consisting of

(i) Tsg101,

(ii) a Tsg101 fragment ~~containing the Tsg101~~ that comprises a UEV domain and ~~capable of interacting with~~ interacts with an HIV GAGp6 late domain,

(iii) a ~~homologue of Tsg101 or said Tsg101 fragment, having a first polypeptide that has~~ an amino acid sequence at least 50% identical about 75% identical to that of ~~Tsg101 or said fragment and capable of interacting with~~ (i) or (ii) and interacts with an HIV GAGp6 late domain, and

(iv) a first fusion protein ~~containing comprising~~ (i), (ii), or (iii) Tsg101, ~~said Tsg101 fragment, or said homologue of Tsg101 or said Tsg101 fragment;~~ and

(b) a second promoter operably linked to a second chimeric nucleic acid encoding a second protein selected from the group consisting of

(1) HIV GAG,

(2) ~~an HIV GAG fragment capable of interacting with Tsg101,~~

(3) ~~a homologue of HIV GAG or said HIV GAG fragment, containing an HIV GAGp6 late domain motif, having an amino acid sequence at least 50% identical to HIV GAG or said HIV GAG fragment and capable of interacting with Tsg101,~~

(4) HIV GAGp6,

[[ (5) ]] (3) ~~an HIV GAGp6 fragment containing a fragment of (1) or (2) that comprises~~ an HIV GAGp6 late domain motif and ~~capable of interacting with~~ interacts with Tsg101,

[[ (6) ]] (4) ~~a homologue of HIV GAGp6 or said HIV GAGp6 fragment, containing an HIV GAGp6 late domain motif, having a second polypeptide that has an amino acid sequence at least about 50% identical to that of HIV GAGp6 or said HIV GAGp6 fragment and capable of interacting with~~ (1), (2), or (3) and interacts with Tsg101, and

[[ (7) ]] (5) a second fusion protein ~~containing comprising~~ (1), (2), (3), or (4) ~~said HIV GAG, said HIV GAG fragment, said homologue of HIV GAG or said HIV GAG fragment, said HIV GAGp6, said HIV GAGp6 fragment, or said homologue of HIV GAGp6 or said HIV GAGp6 fragment;~~

wherein said first and second proteins ~~are capable of interaction~~ interact to form a protein complex within said isolated human host cell.

Claim 65 (new): The isolated complex of claim 1, wherein said Tsg101 fragment consists essentially of a UEV domain.

Claim 66 (new): The isolated complex of claim 1, wherein said Tsg101 fragment comprises a portion of Tsg101 having no more than 207 contiguous amino acid residues, further comprising a UEV domain.

Claim 67 (new): The isolated complex of claim 12, wherein said Tsg101 fragment consists essentially of a UEV domain.

Claim 68 (new): The isolated complex of claim 12, wherein said Tsg101 fragment comprises a portion of Tsg101 having no more than 207 contiguous amino acid residues, further comprising a UEV domain.